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The velocity of pions in the low-temperature phase of QCD

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The dispersion relation of the pion quasiparticle is calculated in the confined phase of QCD with two light flavors of quarks using lattice simulations. In the hadron gas, the would-be diffusion pole of the axial charge density and the Goldstone boson of chiral symmetry breaking "mix"; as a result, a single light quasiparticle emerges whose dispersion relation can be determined from equilibrium quantities (D.T. Son and M. Stephanov, Phys. Rev. D66 (2002) 076011). Results are presented for temperatures between $0.7T_c$ and T_c .

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